

Wisconsin Natural Gas Use, by Economic Sector

NATURAL GAS
END-USE
5.1%
FROM 2010

In the electric sector, natural gas used to generate electricity increased by 12.2 percent. The electric sector includes natural gas used by utilities and independent power producers who generate and sell electricity to other companies. The agriculture sector saw a 53.1 increase in natural gas use in 2011 over 2010, most likely attributable to falling natural gas prices. Agriculture sector use includes farms (e.g., crop drying) and greenhouses and nurseries.

A map of Natural Gas Company Territories and Major Pipelines can be found in the Map Appendix in this publication.

In 2011, cooler winter weather led to increased natural gas use in the residential sector. Overall, natural gas end-use increased by 5.1 percent from 2010. Natural gas end-use is up 14.3 percent from 1990.

1970-2011 TRILLIONS OF BTU AND PERCENT OF TOTAL

Year	Residential		Commercial ^a		Industrial		Electric ^b		Agricultural ^c		Transportation ^d		Total	Total End Use
1970 ^r	107.0	32.7%	42.2	12.9%	147.1	44.9%	31.1	9.5%					327.4	296.3
1975 ^r	122.4	33.2%	57.0	15.5%	169.1	45.9%	19.8	5.4%					368.3	348.5
1980 ^r	124.0	36.0%	61.4	17.8%	144.5	42.0%	14.1	4.1%					344.0	329.9
1985 ^r	116.9	38.4%	59.8	19.7%	126.1	41.4%	1.4	0.5%					304.2	302.8
1990 ^r	114.7	37.4%	66.8	21.8%	122.6	40.0%	2.4	0.8%					306.4	304.0
1995 ^r	137.5	36.1%	85.9	22.5%	147.6	38.7%	10.1	2.7%					381.1	371.0
1996 ^r	149.8	37.1%	95.1	23.6%	151.5	37.5%	7.4	1.8%					403.8	396.4
1997 ^r	137.3	34.3%	89.8	22.4%	157.4	39.3%	16.0	4.0%					400.5	384.5
1998 ^r	117.2	31.9%	82.3	22.4%	143.5	39.0%	24.6	6.7%					367.7	343.1
1999 ^r	129.1	33.9%	82.8	21.7%	147.5	38.7%	21.5	5.6%					380.9	359.4
2000 ^r	136.4	34.7%	82.1	20.9%	153.4	39.0%	21.4	5.4%					393.4	372.0
2001 ^r	126.4	35.1%	77.0	21.4%	134.2	37.3%	22.6	6.3%					360.1	337.6
2002 ^r	138.2	36.0%	86.6	22.5%	138.7	36.1%	20.7	5.4%					384.2	363.5
2003 ^r	143.2	36.3%	88.1	22.3%	138.7	35.2%	24.3	6.2%					394.3	370.0
2004 ^r	136.1	35.6%	83.0	21.7%	142.1	37.1%	21.4	5.6%					382.7	361.2
2005 ^r	132.9	32.3%	85.9	20.9%	132.3	32.1%	59.4	14.4%	1.3	0.3%	0.02	0.01%	411.8	352.5
2006 ^r	121.9	32.6%	86.2	23.1%	119.7	32.1%	44.5	11.9%	1.1	0.3%	0.03	0.01%	373.4	329.0
2007 ^r	133.0	33.2%	89.1	22.2%	122.8	30.6%	54.9	13.7%	1.1	0.3%	0.02	0.01%	401.0	346.1
2008 ^r	142.5	34.6%	94.9	23.0%	129.6	31.4%	41.7	10.1%	3.6	0.9%	0.02	0.00%	412.4	370.7
2009 ^r	135.0	34.6%	90.2	23.1%	121.4	31.1%	41.6	10.6%	2.5	0.6%	0.02	0.01%	390.8	349.2
2010 ^r	124.9	33.4%	81.4	21.8%	122.6	32.8%	43.1	11.5%	1.6	0.4%	0.04	0.01%	373.6	330.6
2011 ^p	131.0	33.1%	85.6	21.6%	128.4	32.4%	48.3	12.2%	2.5	0.6%	0.06	0.02%	395.8	347.5

^a Includes sales to government agencies and other public authorities for general or institutional purposes and vehicle fuel, classified as "other" sales by the American Gas Association.

^b Includes gas used in electric power generation by utilities and independent power producers.

^c Data on agricultural use of natural gas became available in 2005, and was previously included in the commercial sector figures. The 2008 spike in consumption is due to a confluence of factors including a wet, fall crop harvest.

^d Prior to 2000, natural gas for transportation was rolled into the commercial sector.

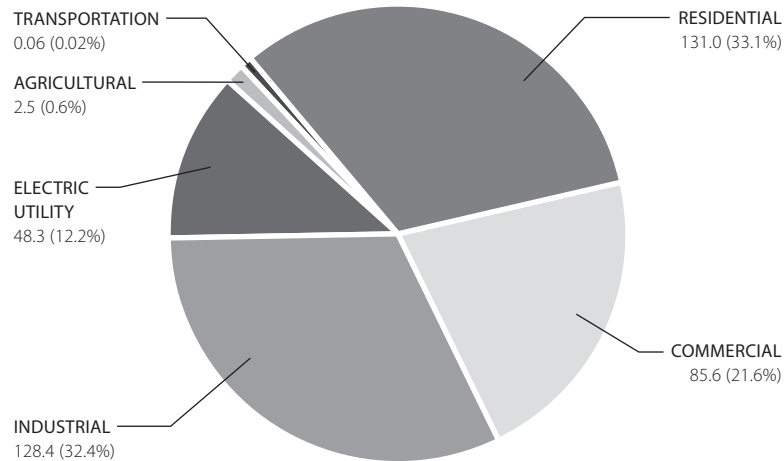
^p Preliminary estimates.

^r Revised using final annual data from the federal Energy Information Administration.

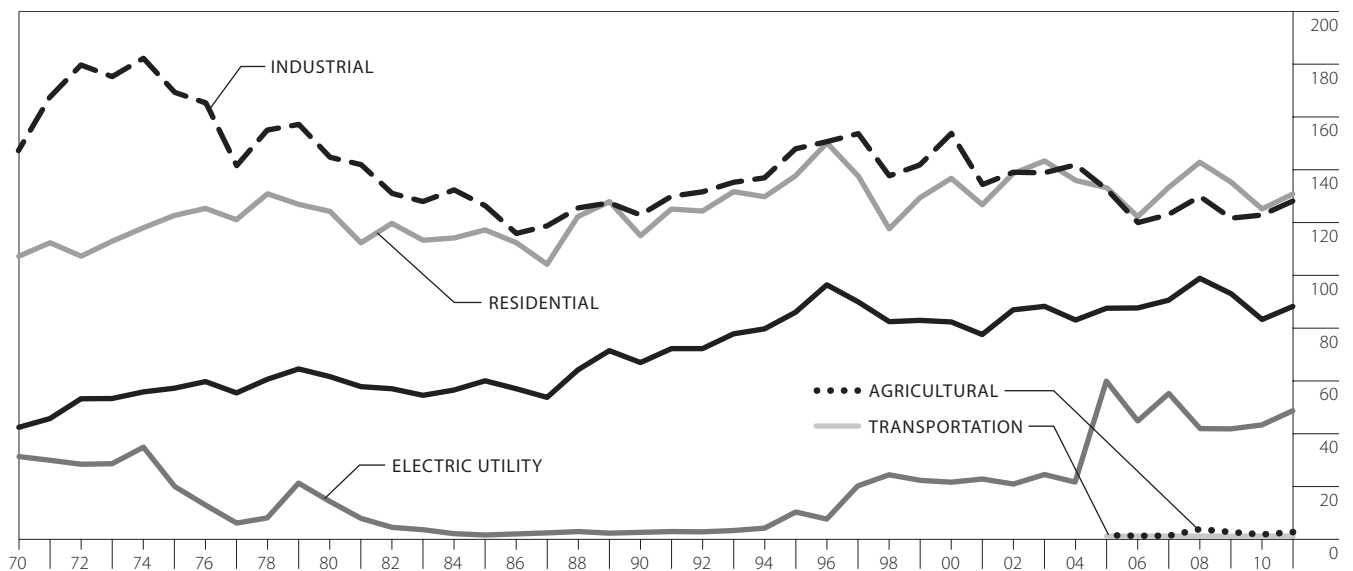
Source: American Gas Association, *Gas Facts* (1961-1997); Public Service Commission of Wisconsin, Accounts and Finance Division, *Statistics of Wisconsin Public Utilities*, Bulletin #8 (1963-1989), Public Service Commission of Wisconsin, *Operating Revenue and Expense Statistics; Class A and B Utilities in Wisconsin* (1990-1993), form PSC-AF 2 *Gas Sales and Sales Ratio* (1994-2007) and discussions with Public Service Commission staff; U.S. Department of Energy, *Natural Gas Annual*, 1991-2011 [DOE/EIA-0131(08)] (March 2012) and *Natural Gas Monthly* [DOE/EIA-0130 (2012/03)] (March 2012). <http://www.eia.gov/naturalgas/monthly/>. <http://www.eia.gov/naturalgas/annual/>; U.S. Department of Agriculture/ National Agriculture Statistics Service, unpublished data (2005-2011).

Wisconsin Natural Gas Use, by Economic Sector

2011 TRILLIONS OF BTU AND PERCENT OF TOTAL



1970-2011 TRILLIONS OF BTU



Source: Wisconsin State Energy Office.

Wisconsin Natural Gas Sales, by Public Service Commission of Wisconsin Sector

In 2011, natural gas use for residential and non-residential space heating increased. Because of its lower cost, transport gas continues to be the preferred method of purchasing gas by large commercial and industrial users. These large users purchase the gas directly from the producers and have the interstate pipelines and local distribution companies transport this gas through their pipeline system for a fee.

Firm natural gas service guarantees no interruptions while *interruptible* service permits interruption on short notice, generally in peak-load seasons. Natural gas classified under “general” is used for applications other than heating, such as running gas appliances like a stove, dryer or water heater.

Data presented here are derived from natural gas utility annual reports submitted to the Public Service Commission of Wisconsin. Data collected by the federal Energy Information Administration and the PSCW differ in methodology used to account for natural gas used by a utility for electric generation, resulting in a difference in statewide gas consumption. Figures on this page do not match figures elsewhere in this publication due to different data sources.

This table was completely revised in 2009 to account for new methodology that more accurately tracks gas consumption across Wisconsin.

1970-2011 TRILLIONS OF BTU

Year	Residential		Commercial, Industrial & Electric			Total to Ultimate Utility Customers	Commercial, Industrial and Electric Transport Gas	Total Sold and Used ^{c,d}
	General	Heating	Firm ^a	Interruptible ^b	Heating			
1970	7.6	101.3	27.4	121.9	47.6	324.0	0.0	324.0
1975	6.8	112.4	36.6	135.2	60.6	362.8	0.0	362.8
1980	4.3	116.8	25.0	99.6	62.2	343.5	0.0	343.5
1985	2.8	114.7	13.4	95.6	65.6	306.7	0.0	306.7
1990	2.1	112.1	3.7	32.6	59.8	228.4	75.1	303.5
1995	1.8	135.0	3.3	50.2	78.7	289.9	87.4	377.2
1996	1.9	145.8	3.3	37.6	86.2	294.1	103.3	397.4
1997	1.8	134.2	3.3	23.6	79.3	260.6	133.3	394.0
1998	1.6	113.6	3.2	17.1	66.7	216.4	141.8	358.2
1999	1.6	125.1	3.0	18.3	72.5	231.6	147.0	378.6
2000	1.6	132.0	2.8	16.4	77.8	241.9	147.5	389.4
2001	1.4	123.7	3.2	14.7	70.0	224.5	133.3	357.7
2002	1.4	134.6	4.2	16.2	73.6	244.0	138.2	382.2
2003	1.5	140.2	4.3	12.1	77.6	253.9	136.0	390.0
2004	1.5	133.0	4.3	9.1	73.0	234.8	138.2	373.0
2005	1.4	129.9	3.4	9.6	72.8	239.5	157.3	396.8
2006	1.4	118.7	3.0	8.6	69.9	214.1	145.0	359.1
2007	1.5	129.7	3.3	8.6	74.2	232.4	159.7	392.1
2008	1.7	139.0	3.5	9.7	81.2	247.6	158.1	405.7
2009	1.7	131.7	3.5	9.0	76.7	231.4	153.3	384.8
2010 ^r	1.7	121.8	3.1	8.5	70.1	214.5	153.8	368.3
2011 ^p	1.8	127.7	3.3	8.3	74.2	226.4	155.6	382.0

^a Firm service guarantees no interruptions.

^b Interruptible service permits interruption on short notice, generally in peak-load seasons.

^c Includes gas used by the gas utility and transport gas.

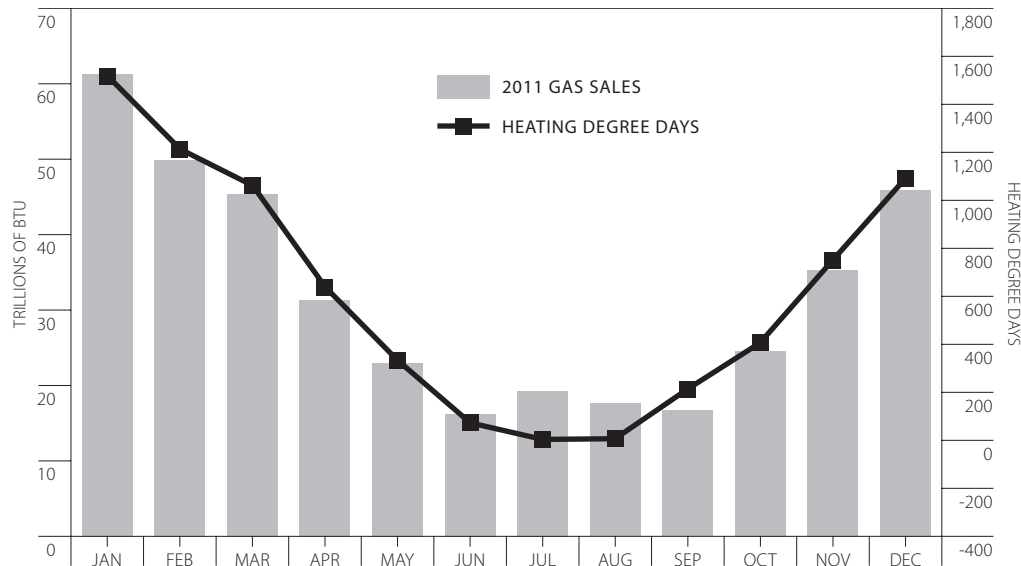
^d Totals given here may differ from other tables due to different sources.

^p Preliminary estimates.

^r Revised.

Source: Public Service Commission of Wisconsin, Accounts and Finance Division, *Statistics of Wisconsin Public Utilities*, Bulletin #8 (1963-1989), *Operating Revenue and Expense Statistics; Class A and B Utilities in Wisconsin* (1990-1993), and form PSC-AF 2 (1994-2011).

Wisconsin Natural Gas Sales, by Month

2011 GAS SALES AND HEATING DEGREE DAYS


This graph has been revised to correct for baseline natural gas consumption unrelated to space heating. Baseline consumption is not weather variable.

1976-2011 TRILLIONS OF BTU

Month	1976	1980	1985	1990	1995	2000	2005	2006	2007	2008	2009	2010	2011 ^a
January	50.9	52.8	51.3	40.6	52.7	60.1	60.2	44.9	54.3	62.2	67.5	61.4	61.3
February	40.3	47.3	42.3	39.3	48.7	47.1	45.7	49.3	61.5	58.8	49.1	48.7	49.9
March	38.5	42.9	32.2	34.3	39.1	37.7	48.3	42.2	41.1	49.0	43.1	36.4	45.4
April	26.5	27.4	21.2	25.2	32.9	32.0	28.8	23.6	32.4	30.3	30.4	22.3	31.3
May	22.3	17.6	14.4	18.9	20.0	21.6	22.8	19.8	19.1	20.5	18.3	19.5	23.0
June	16.0	14.1	11.2	12.7	15.5	15.9	21.2	18.5	16.0	15.6	17.4	17.8	16.2
July	14.6	13.4	11.1	11.5	15.2	15.6	20.2	17.7	17.7	17.1	14.7	18.6	19.3
August	15.8	13.5	11.7	12.8	17.6	18.0	21.0	18.4	20.3	16.9	16.0	19.9	17.6
September	16.3	14.8	13.1	14.1	16.9	17.6	18.4	17.6	17.3	16.7	17.5	16.7	16.7
October	27.4	25.9	18.7	22.7	25.2	24.2	24.0	31.2	25.1	26.4	28.4	22.0	24.6
November	38.9	32.2	31.2	30.3	44.7	40.6	35.8	35.6	37.4	37.8	32.4	34.7	35.3
December	51.3	46.3	48.6	44.3	54.5	63.7	55.1	45.0	54.6	59.1	54.5	55.1	45.9
Total^a	358.8	348.2	306.9	306.9	383.0	394.1	401.5	363.8	396.8	410.4	389.5	373.1	386.7

^a Totals given here may differ from other tables due to different sources.

^p Preliminary estimates.

Source: Wisconsin natural gas utility monthly AF2 reports submitted to the Public Service Commission of Wisconsin (1976-2011). www.psc.wi.gov/apps35/ERF_search/content/SearchResult.aspx

NATURAL GAS
3.7%

In 2011, cooler weather during the winter heating season months led to a 3.7 percent increase in natural gas use compared to the 2010. Sales of natural gas are directly related to the number of Heating Degree Days (HDD). For more information on HDDs and Cooling Degree Days (CDD), see Chapter 8 in this publication.

July peaks in consumption are due to utilities using natural gas for electricity generation to meet increased demand driven by air conditioning use.

Springtime consumption is higher because a building's baseline temperature is colder following winter. This trend is reversed in the fall when buildings retain heat from the summer.

Average Number of Natural Gas Customers in Wisconsin, by Public Service Commission of Wisconsin Sector

9,043
NEW
CUSTOMERS

Wisconsin gas utilities added 9,043 new customers in 2011.

This table was completely revised in 2009 to account for new methodology that more accurately tracks the number of natural gas customers across Wisconsin.

Firm natural gas service guarantees no interruptions while *interruptible* service permits interruption on short notice, generally in peak-load seasons. Natural gas classified under “general” is used for applications other than heating, such as running gas appliances like a stove, dryer or water heater. *Transport* gas is gas piped through utility pipelines, but paid for through a direct contract between an industrial user and the natural gas pipeline company.

1970-2011

Year	Residential		Commercial, Industrial & Electric				Total
	General	Space Heating	Firm	Interruptible	Space Heating	Transportation	
1970	183,695	566,676	13,806	3,104	50,783		818,064
1975	157,684	700,766	11,685	3,716	65,666		939,517
1980	112,700	853,300	10,058	2,206	78,736		1,057,000
1985	90,500	922,500	9,220	2,312	85,468		1,110,000
1990	77,000	1,046,557	9,713	1,257	101,487	740	1,236,754
1995	62,000	1,229,424	7,723	1,426	122,275	569	1,423,417
1996	60,900	1,263,670	7,115	2,159	124,930	803	1,459,577
1997	59,200	1,302,148	6,954	1,405	130,087	1,138	1,500,932
1998	57,900	1,332,168	7,199	1,255	133,854	1,501	1,533,877
1999	56,000	1,370,909	7,221	1,124	135,241	1,999	1,572,494
2000	54,700	1,404,259	7,095	1,005	139,764	2,136	1,608,959
2001	51,500	1,433,036	7,511	1,233	142,844	2,326	1,638,450
2002	49,200	1,465,500	8,208	1,362	147,404	2,448	1,674,122
2003	48,900	1,492,555	8,295	1,396	148,181	2,394	1,701,721
2004	48,300	1,521,419	8,956	1,377	149,323	2,441	1,731,816
2005	45,700	1,546,921	7,673	1,266	152,145	2,509	1,756,214
2006	45,400	1,566,372	6,790	1,234	154,307	2,450	1,776,553
2007	45,900	1,586,300	6,886	1,195	156,131	2,401	1,798,813
2008 ^r	45,900	1,600,744	7,002	1,201	158,421	2,371	1,815,639
2009 ^r	45,700	1,610,914	6,927	1,209	159,763	2,340	1,826,853
2010 ^r	45,800	1,617,783	6,900	1,203	160,151	2,332	1,834,169
2011 ^p	45,800	1,626,034	6,931	1,195	160,910	2,342	1,843,212

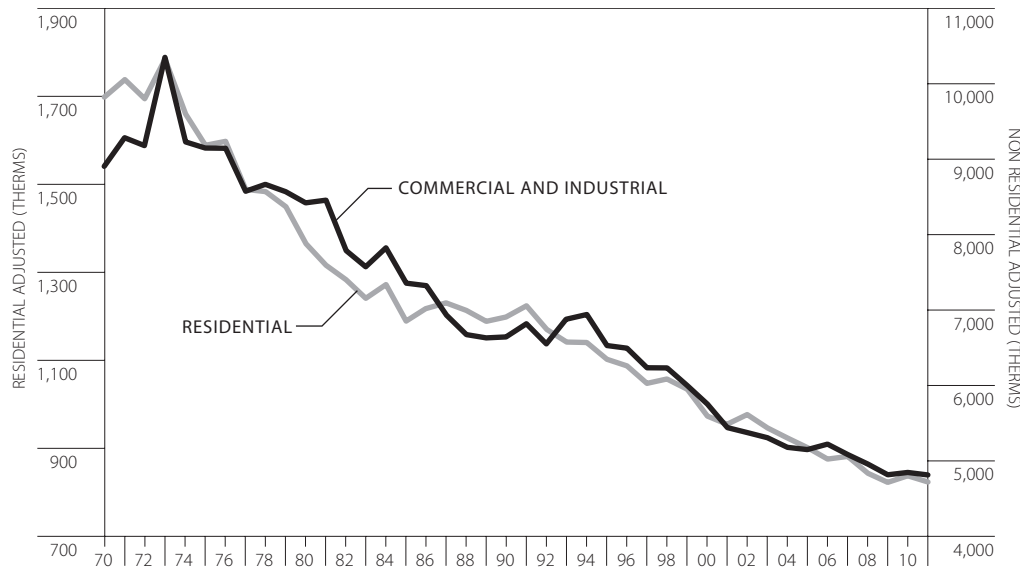
^p Preliminary estimates.

^r Revised.

Source: Public Service Commission of Wisconsin, Accounts and Finance Division, *Statistics of Wisconsin Public Utilities*, Bulletin #8 (1963-1989), *Operating Revenue and Expense Statistics; Class A and B Utilities in Wisconsin* (1990-1993), and form PSC-AF 2 Gas Sales and Sales Ratio (1994-2011), U.S. Department of Energy, Natural Gas Annual, 1991-2011 [DOE/EIA-0131(11)] (March 2012). <http://www.eia.gov/naturalgas/annual/>.

Wisconsin Natural Gas Sales Per Customer, by Public Service Commission of Wisconsin Sector

1970-2011 THERMS PER CUSTOMER

RESIDENTIAL
SPACE HEATING**1.7%**COMMERCIAL
& INDUSTRIAL
SPACE HEATING**0.7%**

Natural gas use for residential space heating, adjusted for weather conditions, decreased 1.7 percent in 2011, while Commercial and Industrial space heating decreased 0.7 percent in 2011. Figures in this table were revised to include updated weather-correction methodology.

Data in this table have been historically revised to reflect 1981-2010 30-year weather normal, and 2010 population weight by weather zone.

Year	Residential			Commercial, Industrial & Electric			
	General	Space Heating Actual	Space Heating Adjusted ^a	Firm	Interruptible	Space Heating Actual	Space Heating Adjusted ^a
1970	412	1,788	1,697	19,852	393,886	9,377	8,900
1975	432	1,603	1,587	31,297	364,846	9,234	9,139
1980	384	1,443	1,364	32,065	451,417	8,900	8,412
1985	310	1,250	1,187	19,336	413,392	7,742	7,348
1990	277	1,078	1,197	5,705	259,679	5,973	6,635
1995	295	1,104	1,101	5,991	352,144	6,540	6,521
2000	296	950	972	4,667	163,625	5,615	5,746
2001	274	873	953	5,054	119,572	4,974	5,433
2002	279	929	975	6,129	119,077	5,112	5,367
2003	310	950	945	6,289	86,533	5,327	5,299
2004	302	885	922	5,805	66,183	4,966	5,171
2005	304	848	900	5,541	75,815	4,843	5,141
2006	299	763	874	5,710	69,685	4,552	5,213
2007	334	826	880	6,177	71,737	4,768	5,076
2008	372	878	842	6,404	81,151	5,160	4,950
2009	382	827	821	6,524	74,036	4,840	4,807
2010	363	761	836	5,863	70,742	4,405	4,838
2011 ^p	395	794	822	6,205	69,211	4,644	4,805

^a Space heating categories are adjusted to reflect demand under average heating degree days (HDDs). In the residential category, annual consumption per heating degree day was multiplied by the 1981-2010 30-year normal of 7,531 HDDs. In the commercial category, the space heating use was adjusted the same way.

^p Preliminary estimates.

Source: Public Service Commission of Wisconsin, *Statistics of Wisconsin Public Utilities*, Bulletin #8 (1963-1989), *Operating Revenue and Expense Statistics; Class A and B Utilities in Wisconsin* (1990-1993), and form PSC-AF 2 (1990-2011).

Wisconsin Natural Gas Deliveries, by Pipeline Company

The major supplier of natural gas to Wisconsin, ANR, transports most of its gas from Oklahoma and Louisiana. Northern Natural Gas Company transports its gas to Wisconsin from Texas, Oklahoma, Kansas and Alberta, Canada. Natural Gas Pipeline Company transports gas to Wisconsin primarily from Oklahoma, Louisiana and Texas. However, Viking Gas Transmission Company's gas originates primarily from Alberta, Canada. Guardian Pipeline began transporting natural gas to Wisconsin on December 7, 2002.

1970-2011 TRILLIONS OF BTU AND PERCENT OF TOTAL

Year	ANR Pipeline Co. ^a		Viking Gas Trans. Co. ^b		Natural Gas Pipeline Co. ^c		Northern Natural Gas Co.		Guardian Pipeline ^d		Total ^{e,f}
1970	289.4	88.2%	6.0	1.8%	6.3	1.9%	26.6	8.1%			328.3
1975	323.0	88.5%	5.7	1.6%	7.1	1.9%	29.2	8.0%			365.0
1980	305.5	88.8%	3.9	1.1%	7.8	2.3%	26.8	7.8%			344.0
1985	265.8	87.4%	1.2	0.4%	7.7	2.5%	29.4	9.7%			304.1
1990	218.2	72.0%	6.0	2.0%	7.4	2.4%	53.8	17.7%			303.2
1995	264.3	69.6%	9.1	2.4%	23.5	6.2%	83.1	21.9%			380.0
1996	269.5	67.7%	9.9	2.5%	26.1	6.6%	92.3	23.2%			397.8
1997	265.8	68.1%	10.4	2.7%	23.1	5.9%	90.8	23.3%			390.1
1998	241.0	67.6%	10.2	2.9%	19.7	5.5%	85.5	24.0%			356.4
1999	256.3	68.8%	11.4	3.1%	16.3	4.4%	88.3	23.7%			372.3
2000	272.1	69.0%	11.1	2.8%	21.0	5.3%	90.0	22.8%			394.2
2001	236.4	66.0%	14.1	3.9%	23.7	6.6%	84.1	23.5%			358.3
2002	267.2	68.7%	15.1	3.9%	22.3	5.7%	82.5	21.2%	1.9	0.5%	389.0
2003	257.0	64.6%	16.0	4.0%	19.9	5.0%	84.8	21.3%	20.3	5.1%	398.0
2004	241.8	60.3%	14.8	3.7%	19.8	4.9%	84.0	20.9%	40.8	10.2%	401.2
2005	253.2	60.9%	16.1	3.9%	19.6	4.7%	84.0	20.2%	42.9	10.3%	415.8
2006	219.0	57.2%	14.6	3.8%	19.9	5.2%	88.6	23.2%	40.6	10.6%	382.7
2007	249.9	58.9%	18.8	4.4%	18.0	4.2%	88.4	20.8%	48.9	11.5%	424.0
2008	258.3	58.4%	17.9	4.0%	17.5	4.0%	94.9	21.4%	53.9	12.2%	442.5
2009	243.0	58.8%	17.6	4.3%	18.5	4.5%	80.6	19.5%	53.5	12.9%	413.2
2010	226.9	59.9%	18.8	5.0%	12.2	3.2%	77.1	20.3%	43.9	11.6%	378.7
2011 ^p	237.9	57.7%	18.8	4.6%	11.4	2.8%	78.0	18.9%	66.1	16.0%	412.1

^a Formerly American Natural Resources Pipeline Co.

^b Formerly Midwest Gas Transmission Co.

^c In 1994, Midcon Corporation became part of the Natural Gas Pipeline Co. Prior to 1994, data in this table included delivery information from Midcon Corporation.

^d The Guardian Pipeline became operational on December 7, 2002.

^e Total purchases differ from the total sold and used by gas utilities due to inventory changes, utility production from liquefied petroleum gas and some unaccounted gas.

^f Prior to 1990, deliveries represent utility gas sales. Beginning in 1990, deliveries represent total gas used in Wisconsin, including both utility and transported gas deliveries.

^p Preliminary estimates.

Source: Public Service Commission of Wisconsin, Accounts and Finance Division, *Statistics of Wisconsin Public Utilities*, Bulletin #8 (1970-1993). Telephone conversations and unpublished emails with pipeline representatives 1991-2011.